

What is claimed is:

1. A method for triggering the transmission of a flow control packet between a receiving device and a sending device in a communication network, the method comprising:
  - 5 monitoring free space in a buffer associated with the receiving device to determine if the free space available in the buffer has increased above a threshold;  
sending a flow control packet to the sending device in response to a determination that the free space available in the buffer has increased above the threshold, the flow control packet indicating the amount of free space available in the buffer.
- 10 2. The method of claim 1 wherein the threshold is a predetermined level.
3. The method of claim 2 further comprising, before monitoring to determine if the free space available in the buffer has increased above the threshold, monitoring free space  
15 in the buffer to determine if the free space available in the buffer has fallen below a bottom threshold that is smaller than the threshold.
4. The method of claim 1 wherein the threshold is relative to a variable free space amount.
- 20 5. The method of claim 4 further comprising setting the variable free space amount to a lowest level of free space available monitored in the buffer since a flow control packet was last sent.
- 25 6. The method of claim 5 wherein the threshold equals the variable free space amount plus a predetermined offset.
7. The method of claim 1 further comprising sending a flow control packet if a predetermined number of clock cycles has passed since a flow control packet was last  
30 sent.

8. In a communication network that requires a receiving device to send a sending device a flow control packet containing an amount indicative of available free space in a receiving buffer at least once every predetermined number of clock cycles, the method comprising:
- 5 determining if the free space available in the buffer has increased above a threshold; and
- sending a flow control packet to the sending device in response to a determination that the free space available in the buffer has increased above the threshold.
- 10 9. The method of claim 8 wherein the threshold is a predetermined level.
10. The method of claim 9 further comprising before the act of determining, monitoring free space in the buffer to determine if the free space available in the buffer has fallen below a bottom threshold that is smaller than the threshold.
- 15 11. The method of claim 8 wherein the threshold is relative to a variable free space amount.
12. The method of claim 11 further comprising setting the variable free space amount
- 20 to a lowest level of free space available monitored in the buffer since a flow control packet was last sent.
13. The method of claim 12 wherein the threshold equals the variable free space amount plus a predetermined offset.
- 25 14. The method of claim 8 further comprising sending a flow control packet if a given number of clock cycles, no greater than the predetermined number, has passed since a flow control packet was last sent.
- 30 15. A method for triggering the transmission of a flow control packet between a receiving device and a sending device in a communication network, the method

comprising:

determining an amount of free space in a buffer associated with the receiving device;

recording the amount of free space in a storage location;

5 updating the amount in the storage location as the amount of free space becomes less than the amount in the storage location;

comparing the amount of free space in the buffer to the sum of the amount in the storage location plus a predetermined offset; and

10 triggering a flow control packet when the amount of free space has increased a sufficient amount as determined by the comparison.

16. A method according to claim 15 further comprising setting the predetermined offset.

15 17. A method according to claim 15 wherein determining an amount of free space comprises subtracting a current amount of data in the buffer from a known capacity of the buffer.

18. A method according to claim 15 wherein determining an amount of free space  
20 comprises:

reading a first pointer corresponding to a read position in the buffer;

reading a second pointer corresponding to a write position in the buffer;

determining an amount of used space between the second pointer and the first pointer; and

25 calculating a difference between the amount of used space and a known capacity of the buffer to arrive at the amount of free space.

19. A method according to claim 15 wherein determining an amount of free space comprises:

30 reading a first address corresponding to a read position in the buffer;

reading a second address corresponding to a write position in the buffer;

obtaining a difference between the second address and the first address to  
determine an amount of used space; and

subtracting the amount of used space from a known capacity of the buffer to arrive  
at the amount of free space.

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20. A method according to claim 15 wherein the buffer is a first in first out buffer.

21. A method according to claim 15 wherein the flow control packet includes an  
amount indicative of the amount of free space in the buffer.

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